



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/765,676	01/26/2004	Jesse Shu	0023-0214	9884

44987 7590 10/10/2007
HARRITY SNYDER, LLP
11350 Random Hills Road
SUITE 600
FAIRFAX, VA 22030

EXAMINER

NALVEN, ANDREW L

ART UNIT	PAPER NUMBER
----------	--------------

2134

MAIL DATE	DELIVERY MODE
-----------	---------------

10/10/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/765,676

Applicant(s)

SHU ET AL.

Examiner

Andrew L. Nalven

Art Unit

2134

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 August 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) 12-16 and 28-31 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 and 17-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>6/29/2005, 6/17/2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-31 are pending. Claims 12-16 and 28-31 are withdrawn from consideration.

Election/Restrictions

2. Applicant's election with traverse of Group I (claims 1-00 and 17-27) in the reply filed on 8/31/2007 is acknowledged. The traversal is on the ground(s) that there is not a serious burden to the Examiner in examining all of the claims. This is not found persuasive because the subject matter of the groups of claims diverges which would necessitate separate searches and rejections for multiple groups of claims. This would impose a serious burden upon the Examiner.

The requirement is still deemed proper and is therefore made FINAL.

Claim Objections

3. Claim 1 is objected to because of the following informalities:
 - a. Claim 1 provides two periods at the end of the claim.
 - b. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

4. **Claim 17-21 are rejected under 35 U.S.C. 102(a)** as being anticipated by

Syvanne et al EP 1,317,112.

5. **With regards to claim 17**, Syvanne teaches a method of screening incoming packets (Syvanne, paragraph 0012, stateful filtering of packets), comprising: detecting an establishment of a firewall session between a mobile station logged onto a GPRS network and a system on a packet data network (Syvanne, paragraph 0019, detects registration of a new mobile entity using SIP, paragraph 0029, data connectivity may be based on GTP tunneling protocol, paragraph 0036, GPRS); detecting an end to the firewall session (Syvanne, paragraph 0032, connection moved from being handled by one firewall to another, paragraph 0022, firewall deletes entries in its entity table, paragraph 0041, receives message from other firewall and updates/deletes sessions); and sending a request to a Gi firewall protecting the gateway support node from attacks from the packet data network to remove the firewall session from an associated firewall session list (Syvanne, paragraph 0022, firewall deletes entries in its entity table, paragraph 0041, receives message from other firewall and updates/deletes sessions).

6. **With regards to claim 18**, Syvanne teaches a method of screening incoming packets (Syvanne, paragraph 0012, stateful filtering of packets), comprising: adding a firewall session identifier to a firewall session list when a new firewall session for user traffic coming from a GTP tunnel is created and when the user traffic does not belong to an existing firewall session (Syvanne, paragraph 0038, if the mobile entity is not currently active in any firewall then a new entry is added); receiving a message to indicate the firewall session is no longer active (Syvanne, paragraph 0032, connection moved from being handled by one firewall to another, paragraph 0022, firewall deletes entries in its entity table, paragraph 0041, receives message from other firewall and updates/deletes sessions); and indicating the firewall session is no longer active on the firewall session list (Syvanne, paragraph 0022, firewall deletes entries in its entity table, paragraph 0041, receives message from other firewall and updates/deletes sessions).
7. **With regards to claim 19**, Syvanne teaches indicating the firewall session is no longer active on the firewall session list includes removing the active firewall session from the firewall session list (Syvanne, paragraph 0032, connection moved from being handled by one firewall to another, paragraph 0022, firewall deletes entries in its entity table, paragraph 0041, receives message from other firewall and updates/deletes sessions).
8. **With regards to claim 20**, Syvanne teaches indicating the firewall session is no longer active on the firewall session list includes marking the firewall session as inactive on the firewall session list (Syvanne, paragraphs 0022, 0032, 0043, when firewall

Art Unit: 2134

session is inactive at the firewall the session is moved from the first to the second mobile entity table).

9. **With regards to claim 21**, Syvanne teaches dropping packets associated with the no longer active firewall session (Syvanne, paragraph 0037, restricts connections and packets that are defined as unwanted).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. **Claims 1-11 and 22-25 are rejected under 35 U.S.C. 103(a)** as being unpatentable over Syvanne et al EP 1,317,112 in view of Kavanagh US PGPub 2003/0081607.

11. **With regards to claim 1**, Syvanne teaches a method of screening incoming packets (Syvanne, paragraph 0012, stateful filtering of packets), comprising: detecting a request to establish a connection from a first network to a packet data network (Syvanne, paragraph 0019, detects registration of a new mobile entity using SIP, paragraph 0029, data connectivity may be based on GTP tunneling protocol); detecting establishment of a tunnel, wherein the tunnel has a support node at each end of the tunnel (Syvanne, paragraph 0019, detects registration of a new mobile entity using SIP,

Art Unit: 2134

paragraph 0034, GTP tunnel connection between SGSN and GGSN), one of the support nodes being a gateway to the packet data network (Syvanne, paragraph 0034, GTP tunnel connection between SGSN and GGSN gateways), wherein the tunnel is used to convey user traffic and the user traffic through the tunnel can have one or more associated firewall sessions on a firewall outside the tunnel (Syvanne, paragraphs 0033-0034, tunnels used to convey user data from mobile nodes, paragraph 0032, can have tunnel connection through firewall 204 and 205); and sending a request to the firewall to clear the one or more firewall sessions (Syvanne, paragraph 0022, firewall deletes entries in its entity table, paragraph 0041, receives message from other firewall and updates/deletes sessions). Syvanne fails to teach detecting a tear down of the tunnel. However, Kavanagh teaches detecting a tear down of the tunnel (Kavanagh, paragraph 0010, receives Detach Request message and initiates tunnel tear down). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to utilize Kavanagh's method of tearing down tunnels with GTP Detach Requests because it offers the advantage of reducing malicious attacks because system resources are not wasted because all GTP requests require a response (Kavanagh, paragraph 0011).

12. **With regards to claim 2**, Syvanne as modified teaches detecting a tear down of the tunnel includes detecting the tear down of a GTP tunnel within the first network (Kavanagh, paragraph 0010, receives Detach Request message and initiates tunnel tear down, Syvanne, paragraph 0029, data connectivity may be based on GTP tunneling protocol).

13. **With regards to claim 3**, Syvanne as modified teaches stopping passage of packets to the first network originating from the packet data network and associated with a firewall session that is not on the firewall session list (Syvanne, paragraph 0037, restricts connections and packets that are defined as unwanted).

14. **With regards to claim 4**, Syvanne as modified teaches dropping packets originating from the packet data network and not associated with a firewall session identifier on the firewall session list (Syvanne, paragraph 0037, restricts connections and packets that are defined as unwanted).

15. **With regards to claim 5**, Syvanne as modified teaches detecting the tear down of the tunnel includes detecting GTP delete tunnel request and response messages (Kavanagh, paragraph 0010, receives Detach Request message and initiates tunnel tear down).

16. **With regards to claim 6**, Syvanne as modified teaches clearing the one or more firewall sessions from a firewall session list (Syvanne, paragraph 0022, firewall deletes entries in its entity table).

17. **With regards to claim 7**, Syvanne as modified teaches adding a firewall session to a firewall session list at a time when a new tunnel is created (Syvanne, paragraph 0038, if the mobile entity is not currently active in any firewall then a new entry is added).

18. **With regards to claim 8**, Syvanne as modified teaches inspecting packets in the tunnel to detect firewall session information (Kavanagh, paragraph 0013, analyze packets in GTP tunnel using a plurality of filtering criteria).

19. **With regards to claim 9**, Syvanne as modified teaches determining at least one of a source address and a destination address of the packets in the tunnel (Kavanagh, paragraph 0013, verifies correct source and destination addresses).

20. **With regards to claim 10**, Syvanne as modified teaches detecting establishment of the tunnel includes determining the one or more firewall sessions associated with the tunnel (Syvanne, paragraph 0032, firewalls share data about tunnel firewall sessions passing through them, paragraph 0038, share data to form second mobile entity table of other sessions in other firewalls).

21. **With regards to claim 11**, Syvanne teaches detecting establishment of the tunnel includes determining two or more firewall sessions associated with the tunnel (Syvanne, paragraph 0032, firewalls share data about tunnel firewall sessions passing through them, paragraph 0038, share data to form second mobile entity table of other sessions in other firewalls).

22. **With regards to claim 22**, Syvanne teaches a system for screening incoming packets (Syvanne, paragraph 0012, stateful filtering of packets), comprising: a GTP firewall having a GTP communication module (Syvanne, paragraph 0034, firewall with GTP tunnel communications passing through). Syvanne fails to teach a firewall tear down engine. However, Kavanagh teaches a Gi communication module that is operable to receive an instruction from the GTP communication module to tear down a firewall session, a firewall session list and a tear down engine that removes inactive firewall sessions from the firewall session list when the tear down engine receives the instruction from the GTP communication module (Kavanagh, paragraph 0010, receives

Art Unit: 2134

Detach Request message and initiates tunnel tear down). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to utilize Kavanagh's method of tearing down tunnels with GTP Detach Requests because it offers the advantage of reducing malicious attacks because system resources are not wasted because all GTP requests require a response (Kavanagh, paragraph 0011).

23. **With regards to claim 23**, Syvanne as modified teaches the GTP firewall is operable to detect a GTP tunnel tear down (Kavanagh, paragraph 0010, receives Detach Request message and initiates tunnel tear down).

24. **With regards to claim 24**, Syvanne as modified teaches the GTP firewall is operable to detect a firewall session end (Syvanne, paragraph 0032, connection moved from being handled by one firewall to another, paragraph 0022, firewall deletes entries in its entity table, paragraph 0041, receives message from other firewall and updates/deletes sessions).

25. **With regards to claim 25**, Syvanne as teaches a GTP firewall includes a Gn firewall provided at a Gn interface (Syvanne, paragraph 0034, firewall 305 between SGSN and GGSN).

26. **Claims 26-27 are rejected under 35 U.S.C. 103(a)** as being unpatentable over Syvanne et al EP 1,317,112 and Kavanagh US PGPub 2003/0081607, as applied to claim 22 above, and in further view of Gopal et al "User plane Firewall for 3G Mobile Network."

27. **With regards to claim 26**, Syvanne as modified fails to teach the GTP firewall includes a Gp firewall provided at a Gp interface. However, Gopal teaches the GTP firewall includes a Gp firewall provided at a Gp interface (Gopal, page 2118, stateful firewall at Gp interface). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to utilize Gopal's method of providing a firewall at the Gp interface because it offers the advantage of defending against attacks that are targeted at the wireless infrastructure (Gopal, page 2118).

28. **With regards to claim 27**, Syvanne as modified fails to teach the GTP firewall is located on a device; and the Gi firewall is located on the device. However, Gopal teaches the GTP firewall is located on a device; and the Gi firewall is located on the device (Gopal, page 2117, column 2, firewall policy at Gi interface). At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to utilize Gopal's method of including a Gi firewall on the device because it offers the advantage of reducing the vulnerability of future telecommunications networks to attacks while still allowing voice and streaming services for users to pass from the user plane (Gopal, page 2117).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Art Unit: 2134

Syvanne et al US PGPub 2003/0117993 discloses a system for handling connections moving between firewalls

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew L. Nalven whose telephone number is 571 272 3839. The examiner can normally be reached on Monday - Thursday 8-6, Alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kambiz Zand can be reached on 571 272 3811. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Andrew Nalven

